

NOTES.

THE annual conversazione of the Royal Society will be held on Friday, May 15.

THE following fifteen candidates have been selected by the council of the Royal Society to be recommended for election into the Society:—Dr. W. M. Bayliss, Prof. T. W. Bridge, Dr. S. Monckton Copeman, Mr. Horace Darwin, Mr. W. P. Hiern, Mr. H. R. A. Mallock, Prof. D. Orme Masson, Mr. Arthur G. Perkin, Prof. E. Rutherford, Prof. R. A. Sampson, Mr. J. E. Stead, Mr. A. Strahan, Prof. J. Symington, Prof. J. S. Townsend, and Mr. A. N. Whitehead.

AT the annual general meeting of the Institution of Civil Engineers, held on April 29, Sir William H. White, K.C.B., F.R.S., was elected president for the sessional year 1903–1904.

DR. P. CHALMERS MITCHELL has been elected secretary of the Zoological Society in the place of Mr. W. L. Sclater, who held the office as acting secretary since the retirement of his father, Dr. P. L. Sclater, F.R.S., last year.

FURTHER particulars of the work and position of the National Antarctic Expedition have been brought by the New Zealand mail, and are published in Wednesday's *Times*. The chief scientific work accomplished by the expedition is summarised as follows:—(1) The discovery of extensive land at the east extremity of the great ice barrier. (2) The discovery that MacMurdo Bay is not a "bay," but a strait, and that Mounts Erebus and Terror form part of a comparatively small island. (3) The discovery of good winter quarters in a high latitude—viz. $77^{\circ} 50' S.$, $166^{\circ} 42' E.$ —with land close by suitable for the erection of the magnetic observatories, &c. The lowest temperature experienced was 92° of frost Fahrenheit. (4) An immense amount of scientific work over twelve months in winter quarters, principally physical and biological. (5) Numerous and extensive sledge journeys in the spring and summer, covering a good many thousand miles, of which the principal is Captain Scott's journey, upon which a latitude of $82^{\circ} 17'$ south was attained, and an immense tract of new land discovered and charted as far as $83^{\circ} 30'$ south, with peaks and ranges of mountains as high as 14,000 feet. (6) The great continental inland ice reached westwards at a considerable distance from the coast and at an altitude of 9000 feet. (7) A considerable amount of magnetic work at sea, also soundings, deep-sea dredging, &c. Commander Scott's narrative of the expedition and statement of scientific observations, telegraphed from Lyttelton, and given in our issue of April 2 (p. 516), is thus confirmed. It was not clear at the time of the cable message why the *Discovery* could not get out of the ice, though the relief vessel, the *Morning*, had done so and returned to New Zealand. It is now known, however, that the *Morning* only got within about eight miles of the *Discovery*, and the stores had to be transferred by means of sledges. As the *Discovery* has not returned to Lyttelton, there is little doubt that the expedition has been forced to spend a third winter in the Antarctic. Much additional expense will thus be incurred, and it is estimated that from 12,000*l.* to 20,000*l.* more will be needed to meet it.

THE death is announced of Mr. C. Bartlett, late superintendent of the Zoological Society.

A UNIVERSAL Exposition of Sciences, Arts, and Industries is to be held at Liège in the year 1905.

THE death is announced of M. de Bussy, member of the Institute of France, and well known as a naval engineer.

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AN earthquake shock, lasting five seconds, was felt in villages between Worksworth and Derby on Sunday, May 3, at 9.20 p.m.

ACCORDING to a Central News message from San Francisco, dated May 1, a report from San Juan states that the Santa Maria volcano in Guatemala is in a state of active eruption.

THE Louis Pillet prize of the Chemical Society of Paris has been awarded to M. E. Theulier, director of the technical staff and head of the research laboratory of Messrs. Lautier fils, of Grasse.

AN international exhibition of agriculture and horticulture, which the Cercle grand-ducal d'Agriculture et d'Horticulture du Grand-Duché de Luxemburg is organising at Luxemburg on the occasion of the fiftieth anniversary of its foundation, will be held from August 29 to September 7.

IT is announced in *Science* that the Donohoe comet-medals of the Astronomical Society of the Pacific have been awarded to M. Michel Giacobini, of Nice, for his discoveries of unexpected comets on December 2, 1902, and January 15, 1903.

THE proposed electric railway to the summit of Mont Blanc is to be commenced shortly. The municipal authorities of Saint Gervais-les-Bains have accepted the scheme, and have accorded the concession to the French engineers, MM. Deruad and Duportal.

A NOTEWORTHY point in connection with the illuminations of Paris, organised by the reception committee in honour of the King's visit, was the electric incandescent lamps of different colours in the chief streets and avenues and on many large buildings. The effect was very brilliant, and the large crowd of sightseers admired it exceedingly.

THE council of the Society of Arts is prepared to award, under the terms of the Benjamin Shaw Trust, a prize of a gold medal, or twenty pounds, for the best dust-arresting respirator for use in dusty processes and in dangerous trades. Inventors intending to compete should send in specimens of their inventions not later than December 31 to the secretary of the Society of Arts, John Street, Adelphi, London, W.C.

INVITATION cards in the name of the president of the Institution of Electrical Engineers are being issued to members of the Institution for a concert to be given at the Royal Albert Hall on the evening of Thursday, June 11, on the occasion of the International Telegraph Conference. The annual conversazione of the Institution will be held at the Natural History Museum on the evening of Tuesday, June 23. This date has been selected as one on which it will be possible for the members of the International Telegraph Conference to be present.

ON Tuesday next, May 12, Prof. G. H. Darwin delivers the first of two lectures at the Royal Institution on "The Astronomical Influence of the Tides," and on Thursday, May 14, Prof. S. H. Vines begins a course of two lectures on "Proteid-Digestion in Plants." The Friday evening discourse on May 15 will be delivered by Dr. D. H. Scott on the "Origin of Seed Bearing Plants."

THE new Johnston Laboratory at University College, Liverpool, is to be opened by Mr. Walter Long, M.P., President of the Local Government Board, on Saturday, May 9. Many distinguished men of science have expressed their intention to be present at the ceremony. On Monday, May 11, a conference on tropical sanitation will be held in the college.

THE Manchester Literary and Philosophical Society will shortly celebrate the centenary of Dalton's enunciation of the atomic theory. On May 19 Prof. F. W. Clarke, of the Columbia University, Washington, will deliver a lecture on the evolution and philosophy of the theory. Arrangements are also being made for a conversazione at Owens College, and exhibition of Dalton manuscripts, portraits, and other records.

REUTER reports that if within a short time no ship from the Falkland Islands arrives at Montevideo or Buenos Ayres with news of the Nordenskjöld Antarctic expedition, an expedition to relieve Nordenskjöld will be equipped at Stockholm immediately, and should no intelligence of the explorer have come to hand in the meantime, will leave on September 1 for the South Shetland Islands, where it should arrive about the middle of November. The funds required for the relief expedition have already been secured.

A GREAT rock slide occurred on the morning of April 29 at Frank, a small mining town on the Canadian Pacific Railway in the Rocky Mountains, and in Alberta Territory. A telegram from Sir Wilfrid Laurier states that the whole east end of Turtle Mountain from the mouth of Frank Mine slid into the valley and blocked it entirely. The railway was covered with débris for a mile and a half east of Frank. The landslide gave rise to great clouds of dust, which were at first thought to be due to a volcanic eruption, and was reported as such, but this conclusion was entirely unfounded.

CAPTAIN SVERDRUP gave an account of his expedition to the Arctic region in 1898 to 1902 before the Royal Scottish Geographical Society on Monday night, and was presented with the gold medal of the Society in recognition of his achievements. Sheriff Guthrie, who presided, prefaced the address with an appeal on behalf of the Scottish Antarctic expedition under Mr. W. S. Bruce. The leader hoped to be engaged in his work for two years, and funds for the first year are still short by 2250*l.*, while for the whole expedition a sum of 10,000*l.* is wanted.

THE Government of India is endeavouring to bring into being the Tata institution for scientific teaching and research at Bangalore. The *Daily Mail* states that the Government has just addressed the Bombay Administration, offering to increase the grant so as to raise the total annual income of the institute to 15,000*l.*, conditionally on the Mysore durbars carrying out its proposal that they should assist. Lord Curzon hopes that Mr. Tata will now expedite his arrangements so as to enable legislation for the constitution of the institute to proceed.

IN the article on standardisation which appeared in *NATURE* of April 23 (p. 587), it is stated that the work of the Engineering Standards Committee was started two years ago at the suggestion of the Institution of Mechanical Engineers. Mr. Leslie S. Robertson, the secretary of the committee, writes to point out that the committee was formed in pursuance of a resolution of the council of the Institution of Civil Engineers. We are glad to make this correction, both for the sake of historical accuracy and because the fact was well known to the writer of the article, who inadvertently named the wrong institution.

M. E. DUPORCQ (Ingénieur des télégraphes), whose death was announced recently (p. 589), was general secretary of the Mathematical Congress at Paris in 1900, and worked hard to make it a success. He was also a vice-secretary of the Mathematical Society of France, and editor of the *Nouvelles Annales*, where most of his mathematical con-

tributions are to be found. These were chiefly in the region of elementary pure mathematics, and he was also a deviser of mathematical problems of the style of Prof. Wolstenholme.

PROF. GEORGE E. HALE has informed *Science* that Miss Helen E. Snow, of Chicago, has provided for the reconstruction of the cœlostat reflecting telescope of the Yerkes Observatory as a memorial to her father. The telescope will be provided with solar and stellar spectrographs, spectroheliographs and other important accessories. The cœlostat reflector which the new telescope is to replace was seriously injured by fire last December, giving rise to erroneous but widespread statements that the main building of the Yerkes Observatory, as well as the 40-inch refractor, had been destroyed.

WE are requested to announce that a representative committee has been formed for the purpose of raising a memorial to the late Sir Henry Bessemer. The remarkable industrial development of the world in recent years is largely due to the metallurgical process which bears the name of Bessemer, and it has long been felt that his life's work should be suitably commemorated in the centre of the British Empire. The objects of the memorial are, first, the erection (and, if necessary, the endowment) of metallurgical teaching and research works in connection with the University of London, equipped for the testing of ores and metallurgical products by modern methods, and for the investigation of new methods and processes; and, second, the foundation of international scholarships for post-graduate courses in practical work in connection with proposals now under the consideration of the Board of Education. The committee is thoroughly representative, and among the men of science upon it are Sir William Abney, K.C.B., F.R.S., Sir John Wolfe Barry, K.C.B., F.R.S., Dr. C. Le Neve Foster, F.R.S., Prof. A. K. Huntingdon, Sir Arthur Rücker, F.R.S., and Sir H. Trueman Wood. A meeting to inaugurate the fund will be held at the Mansion House on Monday, June 29 next, particulars of which will be published later. All communications should be addressed to the secretary, Mr. Charles McDermid, Bessemer Memorial Fund, Salisbury House, London, E.C.

BY the death of Mr. Osler, which occurred on April 26 at his residence, South Bank, Edgbaston, Birmingham, at the age of ninety-five, meteorological science has lost another of its distinguished pioneers. His principal works in this science were contributed to the *Proceedings* of the British Association, and to the *Proceedings* of the Literary and Philosophical Society of Birmingham, between the years 1836 and 1858. He was perhaps best known by his invention of a self-recording direction and pressure anemometer and rain-gauge; one of these instruments was erected at the Philosophical Institute at Birmingham, and a discussion of the observations obtained by it during the years 1839 and 1840 was published in the *Proceedings* of the British Association. Another instrument was erected at the Liverpool Observatory in 1851, and a summary of the records for 1852-5 was published in the latter year. From a report recently received from that observatory, we find that his combined anemometer and rain-gauge is still in use, and continues to give entire satisfaction. In recognition of his researches in this branch of science he was elected a fellow of the Royal Society in 1855. In his earlier years he was actively engaged in the development of the glass industry in Birmingham.

M. PAUL DU CHAILLU, the African explorer and discoverer of the gorilla, died at St. Petersburg on April 30. Paul

Belloni du Chaillu was born in 1835, and at an early age he went to live in the French colony of Senegambia, where his father was a trader. There he acquired a knowledge of languages and modes of life of the tribes, devoting much attention to natural history. At the age of seventeen he went to the United States, where he naturalised himself, but in 1855 he sailed for West Africa again, and spent four years in the interior unaccompanied by any white men, traversing a distance of more than 8000 miles on foot in the equatorial region. The results were embodied in the most important of his works, "Explorations and Adventures in Equatorial Africa" (1861). He returned also with many specimens, some of which were acquired by the British Museum. The work provoked much controversy, and his gorilla and cannibal stories, in particular, were widely discredited; but the general truth of his narrative was afterwards substantiated, both as regards the river systems of the Continent, its equatorial population, and its zoological characteristics. In 1862-65 Du Chaillu revisited West Africa, and afterwards published an account of the expedition in a volume under the title of "A Journey to Ashangoland" (1867). Since then he had made journeys in Sweden, Lapland, and Finland, and written numerous works, the chief being "Stories of the Gorilla Country," "Wild Life under the Equator," "Lost in the Jungle," "The Country of the Dwarfs," "The Land of the Midnight Sun," and "The Age of the Vikings," in which he contended that the origin of the English race was Scandinavian. He was also the author of other works.

REFERRING to Mr. G. Henschel's letter in last week's NATURE (p. 610) on complementary singing by bullfinch and canary, Mr. J. R. Paul writes from Alcluith, Dumbarton, to say that he put a red-pole in a cage hung between the cages of two canaries. After a time the bird dropped the brisk "tweet, tweet" of the finches, and began to imitate the canaries' song. His song is now an almost perfect copy of the canaries' notes, and his own particular note is quite lost. Moreover, Mr. Paul adds that a pair of little green parraquets are also learning the canaries' song. "Within a very few days of their arrival they began to try 'notes,' and already the imitation is laughably correct, the 'squawky,' parrot-like voice making the song only the more ludicrous."

THE first scientific meeting of the Challenger Society for the Promotion of the Study of Oceanic Zoology and Botany was held on April 29, Dr. R. N. Wolfenden in the chair. In a paper on bipolarity, Dr. G. H. Fowler cited recent memoirs to show that, in spite of a good deal of destructive criticism, a *prima facie* case had been made out for a marked similarity (amounting in some instances to specific identity) between the two sub-Polar faunas. Dr. Wolfenden gave a preliminary account of the Copepoda collected by Mr. J. S. Gardiner in the Maldivé Archipelago. More than ninety species had been already identified, of which some sixteen were new. Mr. E. W. L. Holt exhibited and made remarks on a new *Gnathopausia* from deep water. A committee was appointed to inquire whether it will be possible for the Society to undertake a card catalogue for oceanic work.

THE monthly *Bulletin* published by the Philippine Weather Bureau under the direction of the Rev. J. Algué, S.J., contains much valuable information relating to the meteorology and microseismic movements of the Archipelago; the tables include meteorological data deduced from hourly observations made at the Manila Observatory, and rainfall and temperature data at a considerable number of stations.

The last *Bulletin* we have received, for November, 1902, gives an account and the track of a typhoon which occurred between November 7 and 12. This typhoon was one of the most rapid that has been experienced, and its speed did not decrease until it reached the Asiatic continent. The map shows that at noon on November 7 it was near the meridian of 135° east, and that twenty-four hours later it had already reached 122° east longitude, and that it entered Luzon during the afternoon of that day. It speaks well for the efficiency of the forecasting department of the observatory that it was able to give timely warning of the approach of the storm to the provinces threatened.

THE Meteorological Office pilot chart for May shows that there are immense quantities of icebergs and field-ice about the Newfoundland banks, so much, indeed, that the steamship owners have been compelled to order their commanders to disregard the international steamer routes, and keep about sixty miles to the southward, so as to endeavour to keep clear of the danger. A number of bergs have been sighted southward of the 41st parallel, beyond the southern point of the Great Bank, and they extend thence northward in vast numbers up the edge of the bank to about the 50th parallel, and no doubt far beyond, while they are scattered as far eastward as the 40th meridian and westward to the 55th meridian. In addition quantities of field-ice, drifting out of the St. Lawrence by Cabot Strait, render navigation in the neighbourhood of Cape Breton and the south of Newfoundland dangerous. It is many years since there was so much ice in the neighbourhood.

NEGOTIATIONS are in progress with the Danish Government for establishing wireless communication to Iceland by the Marconi system. A provisional agreement has been made between the Marconi Co. and a Danish association by which the latter has the option of carrying out the project; it has not yet been decided whether the communication shall be direct between Iceland, the Faröe Islands and Jutland, or between the islands and Scotland.

THE full text of the Government Bill "to facilitate the introduction and use of electrical power on railways," which was read for a first time last month, has now been printed. The chief effect of the Bill is to give the Board of Trade power to make orders authorising railway companies to use electricity as motive power, and to generate such power or make agreements for its supply. There are several other clauses in the Bill relating to provisions which would be necessary in the case of a railway company changing over partly or wholly to electrical working. The Bill, as it facilitates acquiring the necessary powers for electrical working by doing away with the necessity for introducing a private Bill, can only help forward progress in this direction. The Government is certainly to be congratulated on having, for once in a way, recognised the probable developments of science before it is too late, and we hope that the Bill will soon become law, and that the railway companies will avail themselves of its provisions.

SOME interesting evidence was given before the departmental committee on electricity in mines by Mr. Selby Bigge, especially in relation to the position of this country in comparison with America and continental countries. Mr. Bigge stated that he thought this country was very much behindhand, not only in the application of electricity to mining, but in the manufacture of electrical machinery generally. This he attributed partly to the restrictive nature of our legislation, and partly to the lack of scientific training on the part of the managers and others in authority. He instanced numbers of examples of electrical mining in-

stallations on the Continent, laying special stress on the application of three-phase working and the use of high voltages which this system permitted; he even went so far as to say that, paradoxical as he might seem, the higher voltages were probably safer, as the workmen, knowing that any tampering with the mains meant certain death, left them severely alone. For the actual machinery, 500 to 700 volts was a suitable pressure, but 1000 to 3000 volts might be used with advantage for transmission for considerable distances into the mines. Other evidence of an interesting nature was given before the committee, which is still sitting.

OFFICIAL statistics have on several occasions been collected as to the number of horses and other beasts of burden in Italy, but statistics regarding educational matters appear to be few and far between. The only records of the total attendances in Italian schools or colleges under the control of public or religious bodies refer to the year 1870. For private boys' schools results were collected from 1879, and for girls' schools from 1887, but in no case does information extend beyond 1894. Prof. Amato Amati, writing in the Lombardy *Rendiconti*, now asks for an official census of the private schools and educational institutions of Italy.

VARIOUS experimenters have obtained interference between light-waves with a difference of path reaching in one case as much as 790,000 wave-lengths. Profs. Lummer and Gehrcke now describe experiments in the *Verhandlungen* of the German Physical Society, in which interference phenomena were obtained after nine reflections at the surfaces of a uniform plate, representing a difference of path of 2,600,000 wave-lengths, and they draw the conclusion that among the particles of vapour in the mercury arc used as the source of light, the greater portion send out light capable of producing interference for a longer time than the interval (less than 10^{-8} of a second) in which $2\frac{1}{2}$ million waves are emitted.

THE importance of a convenient, accurate, and at the same time readily understood designation of musical notes in connection with the study of audition and partial deafness forms the subject of a paper by Sir W. R. Gowers, F.R.S., in the *Review of Neurology and Psychiatry* for April. At present there is no uniformity of notation, and the notation adopted by Helmholtz was merely an old and inconvenient notation used in organ construction. The present writer proposes to use C to denote the "middle C" (frequency 264), to use C¹, C², C³ to denote the successive octaves above, and to use C₁, C₂, C₃ to denote the successive octaves below middle C, each octave extending to the B above.

In describing the brain of the walrus, Mr. P. A. Fish (*Proc. U.S. Nat. Mus.*, No. 1325) shows that the general plan of the fissures corresponds to that obtaining in Carnivora generally, and more especially seals.

THE Natural History Branch of the British Museum has received from Lord Crawford a small but interesting series of birds' skins collected by Mr. M. J. Nicholl on St. Paul and Noronha Islands, off the Brazilian coast. The only specimens from the latter island previously in the collection were obtained by Dr. H. N. Ridley in 1886.

In vol. iii., part iii., of the *Annals* of the S. African Museum, Mr. G. A. Boulenger describes six new forms of perch-like fishes from the Natal coast. Recent issues of the *Proc. U.S. Nat. Mus.* contain papers on the band-fishes (Cepolidæ) and loaches (Cobitidæ) of Japan, by Messrs. Jordan and Fowler.

IN the course of a series of notes on the ornithology of Norfolk for 1902, published in the April number of the *Zoologist*, Mr. J. H. Gurney directs attention to the great migration of rooks and other members of the crow family which took place on the east coast during October of last year. The greater number of the immigrants were rooks, and the movement extended at least as far as Lincolnshire. Several rare birds are recorded as stragglers. Mr. Gurney adds that there is no good news to record of the great bustards which were turned down at Brandon in 1900. Of the original fifteen, only a single pair now remain; the hen laid a couple of eggs, which were incubated for six weeks without a successful result.

WE have received from Prof. W. C. M'Intosh a copy of a pamphlet on British fisheries' investigations and the international scheme. After referring to past and present investigations in connection with British fisheries, the author discusses the international scheme for the systematic biological survey of the North Sea, to which allusion has recently been made in our columns, urging that if the British Government resolves to participate in the scheme, attention should be concentrated on the habits and development of fishes and their food-supplies to the exclusion of subjects connected with hydrography. In regard to the supposed deterioration of our fisheries, Prof. M'Intosh is an optimist, remarking that "There is no fear of the extinction of any species, especially of those important to man. Furthermore, fishes have abounded in the primæval as in the modern seas, although the ravages of the gigantic reptilian and other fish-destroyers—which in some instances were distributed over the whole expanse of the ocean—could not have been less than even the far-reaching efforts of man. In neither period has extinction ensued from the prevailing agencies, nor is it likely to take place under these conditions in the future."

AN account of the structure and properties of a leguminous liane, *Derris uliginosa*, the leaves of which have been used as a fish poison by Fijian islanders, has been received from the Wellcome Research Laboratories. A description of the anatomy of the stem is furnished by Mr. Perrédès, from which it appears that irregular secondary vascular structures arise in the cortex. As a result of chemical investigation, Dr. Power discovered a considerable amount of tannin and various resinous substances. The toxic action is attributed to a constituent of that part of the resin which is soluble in chloroform, and not to the tannin.

THE progress of the German East African colony may be studied in the reports presented by the officers in charge of districts, which are embodied in the *Berichte* issued from Dar-es-Salâm. The native food resources are matama, maize, manioc, and in some parts bananas. Owing to the risks of failure of the three first, the natives have been encouraged to take up the cultivation of rice and sweet potatoes. As a source of revenue extensive plantations of coffee have been started by German companies, and on a smaller scale the cultivation of coco-palms, agave and ceara rubber is being extended with promising results.

OF the papers read before the American Society for Plant Morphology and Physiology, two contributed by Dr. E. F. Smith refer to bacterial diseases attacking Japanese plum trees and sweet corn, in both of which cases the author concludes that infection takes place through the stomata. A paper by Prof. Duggar traces the inconsistency of the osmotic action of certain salts on marine algæ to their toxic action, and potassium salts were found to be more

poisonous than the salts of calcium or magnesium. Prof. Jeffrey outlines an anatomical clue to the phylogeny of the monocotyledons which would derive them from dicotyledons. A suggestive paper by Prof. Toumey discusses the initial root system of tree seedlings.

THE latest addition to the useful series of short scientific memoirs published in Paris by M. C. Naud under the name *Scientia* is by Dr. L. Décombe, and is entitled "La Compressibilité des Gaz Réels." This is the twenty-first volume in the series dealing with physical and mathematical subjects.

THE Cambridge University Press has published the second part of vol. ii. of the "Reports of the Cambridge Anthropological Expedition to Torres Straits," which deals with physiology and psychology. The fasciculus contains sections by Mr. Charles S. Myers on hearing, smell, taste and reaction-times, and by Mr. W. McDougall on cutaneous sensations, muscular sense, and variations of blood-pressure.

THE decision of the Government to continue the present temporary Vaccination Act for one year has met with the approval of conscientious objectors, whose case Mr. Alexander Paul appears to take up in his little book, "The Vaccination Problem in 1903, and the Impracticability of Compulsion," recently published by Messrs. P. S. King and Son. The book should be useful in making clear the position of the objectors, so that the difficulties they put forward can be satisfactorily met when occasion requires it.

THE Orient-Pacific Line have published their pleasure cruise arrangements for the forthcoming Norway season. Three steamers will be employed, viz. the *Orient*, the *Cuzco* and the *Ophir*. The cruises begin on June 11, and vary in length from twenty to twenty-eight days. In addition to the attractions of Norwegian scenery and the Midnight Sun, the programme includes a visit to the glaciers of Spitsbergen with a prospect of seeing the Polar pack.

MR. A. R. HINKS writes in the *Monthly Review* for May on the evidence for life on Mars, and his article is illustrated by two maps of the canals or channels observed by Schiaparelli. The article is largely taken up with an account of Mr. Percival Lowell's observations of Mars at Flagstaff, in Arizona, and the conclusions drawn by Mr. Lowell, following a suggestion of Schiaparelli, as to the existence on Mars of a great irrigation system.

THE report of the council of the Hampstead Scientific Society for the year 1902 shows that the association continues its commendable activity. Among the lectures organised by the Society during the year may be mentioned those of Prof. Boyd Dawkins, F.R.S., on the forest primeval of the Coal-measures; Mrs. Dr. Bryant, on bees as builders of the honeycomb and otherwise; and Dr. Shenton, on medical applications of Röntgen rays. But much of the useful work of the Society is accomplished in sectional meetings, which are held in connection with the astronomical, the natural history, and the photographic sections two or three times a month. The example set by the Hampstead Society might with advantage be more widely copied.

CONSIDERABLE evidence is being accumulated at the present time which is apparently strongly antagonistic to the view that electrically charged ions are the factors which are directly active in all cases of chemical change. In the March number of the *Journal of Physical Chemistry*, Mr. H. E. Patten gives an account of experiments on the interaction of metals and hydrochloric acid in various perfectly

anhydrous solvents. The solvents employed were benzene, chloroform, tin and silicon tetrachlorides, phosphorus and arsenic trichlorides, antimony pentachloride, sulphur monochloride, and thionylchloride. These solvents had a smaller conductivity than air, and yet zinc was in all cases directly acted upon by the acid.

AN interesting study of the modifications of acetaldehyde is the subject of a paper by R. Hollmann in the *Zeitschrift für physikalische Chemie*. Experimental data are given which show clearly the relationships existing between acetaldehyde and paraldehyde for temperatures ranging from -100° C. to 300° C. Of special interest are the observations relating to the composition of the liquid substance in its natural state of equilibrium. At the melting point (6.75° C.) the liquid consists of 88.3 per cent. of molecules of paraldehyde, whilst at the boiling point (41.6° C.) the molecular proportion is 53.4, and at the critical temperature (217° C.) only 11 per cent.

THE additions to the Zoological Society's Gardens during the past week include a Two-spotted Paradoxure (*Nandinia binotata*) from West Africa, presented by Mr. H. R. Harger; a Springbok (*Gazella euchoire*) from South Africa, two Feline *Dourocoulis* (*Nyctipithecus vociferans*) from Southern Brazil, two Violet-necked Cassowaries (*Casuarus violacollis*) from the Aru Islands, four White-eared Bulbuls (*Pycnonotus leucotis*), an Indian Python (*Python molurus*), four Saccobranchs (*Saccobranchus fossilis*) from India, three Grey-breasted Bullfinches (*Pyrrhula griseiventris*) from Japan, three Mocassin Snakes (*Tropidonotus fasciatus*) from North America, five Red-spotted Lizards (*Eremias rubropunctata*) from Egypt, a Delalande's Gecko (*Tarentola delalandii*) from West Africa, deposited; a Diamond Snake (*Python spilotes*), three Brush Turkeys (*Talegalla lathamii*) from Australia, purchased; on Axis Deer (*Cervus axis*), eight American Timber Wolves (*Canis occidentalis*), two Crab-eating Raccoons (*Procyon cancrivorus*), born in the Gardens.

OUR ASTRONOMICAL COLUMN.

A NEW COMET.—A telegram received from the Kiel Centralstelle informs us that Mr. Grigg, observing at Mr. Tebbutt's observatory, Windsor, New South Wales, discovered a new comet on April 17. The position of this object at 6h. 44m. 2s. (M.T. Windsor) on April 27 was:—

R.A. = 4h. 3m. 24s.
Dec. = $16^{\circ} 23' 25''$ south.

The daily movement in R.A. is $+1^{\circ} 26'$, and in declination $+0^{\circ} 27'$; the announcement says nothing about the comet's brightness.

The above position is a little s.f. of γ Eridani.

NOVA GEMINORUM.—A telegram received from Prof. E. C. Pickering on April 22, published in No. 3864 of the *Astronomische Nachrichten*, states that "the light of Nova Geminorum is increasing."

THE PARTIAL ECLIPSE OF THE MOON ON APRIL 11.—The most striking feature of this eclipse was the blackness of the eclipsed surface, for it was not possible to see any of the details on that portion of the surface which was covered by the shadow. In a paper published in No. 16 (1903) of the *Comptes rendus*, M. Montangerand describes the results of the attempts he made to photograph that portion of the lunar surface eclipsed by the earth's shadow.

Using the astrographic-chart telescope and Lumière plates, and giving an exposure of one second to each plate, he obtained eleven negatives, two of which, Nos. vii. (Lumière "blue") and ix. (Lumière panchromatic), show the contour of the eclipsed moon, but no surface details.